

## SEQUENCE LISTING

<110> Fernandez-Salas, Ester  
Garay, Patton  
Aoki, Kei Roger

<120> Botulinum Toxin Screening Assays

<130> 17596 (BOT)

<150> US 60/547,591

<151> 2004-02-24

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Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	Glu	Met
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Cys	Thr	Gln	Gly	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala	Ala	Lys
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Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	Leu	Asp
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Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Pro	Pro	Glu	Glu	Gln	Leu	Thr	Phe	Lys
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Asp	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Glu	Tyr	Leu
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Ala	Ser	Gln	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu
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<212> DNA
<213> Bos taurus
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Ala Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys Arg Leu Pro Ala
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Gly Val Pro Thr Glu Pro Thr Val Trp Val Lys Asp Gly Val Gly Leu
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Ala Pro Ser Asp Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val Leu
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Asn Ala Ser His Glu Asp Ala Gly Ala Tyr Ser Cys Arg Gln Arg Leu
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Ser Gln Arg Leu Leu Cys Leu Phe Ser Val Arg Val Thr Asp Ala Pro
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Ser Ser Gly Asp Asp Glu Gly Gly Asp Asp Glu Ala Glu Asp Thr Ala
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Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly
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Asn Pro Thr Pro Ser Ile Thr Trp Leu Lys Asn Gly Lys Glu Phe Arg
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Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg Gln Gln Gln Trp Ser
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Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys
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Val Val Glu Asn Lys Phe Gly Arg Ile Gln Gln Thr Tyr Thr Leu Asp
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Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
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Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu
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Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val
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Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu
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Ser Leu Arg Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu
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Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val
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Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Gly Glu Ala Gly Gly Val
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Phe Ala Gly Val Leu Ser Tyr Gly Leu Gly Phe Leu Leu Phe Ile Leu
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50     55     60
Ala Pro Thr Gly Pro Thr Val Trp Ala Lys Asp Gly Thr Gly Leu Val
65     70     75     80
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85     90     95
Ala Ser His Glu Asp Ala Gly Val Tyr Ser Cys Gln His Arg Leu Thr
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Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser
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Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala
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His	Arg	Ile	Gly	Gly	Ile	Lys	Leu	Arg	His	Gln	Gln	Trp	Ser	Leu	Val	
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 His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val  
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 Gln Thr Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr  
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 Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn  
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 Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys  
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 His Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly  
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Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg	Ile	Leu	Thr	Val	Thr	Ser	Thr	Asp
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&lt;211&gt; 2349

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;400&gt; 13

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&lt;210&gt; 14

&lt;211&gt; 782

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 14

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17

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<400> 16

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&lt;210&gt; 18

&lt;211&gt; 800

&lt;212&gt; PRT

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 18

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Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly
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 <213> Gallus gallus

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gacgtctggt cgtttggagt gcttctgtgg gagatcttca cgctgggggg ctcgccgtac 2040
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gacagccaca gcagctgctc ttctggagac gattcgggtt ttgcccacga cctgcccag 2340
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&lt;210&gt; 26

&lt;211&gt; 796

&lt;212&gt; PRT

&lt;213&gt; Pleurodeles waltlii

&lt;400&gt; 26

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Met Leu Val Trp Leu Cys Gly Leu Cys Leu Val Thr Leu Ala Gly Gly
1      5      10      15
Arg Ser Ala Ala Arg Leu Pro Leu Thr Glu Gly Arg Pro Thr Ala Asp
20      25      30
Phe Leu Pro Gly Asp Ala Ser Leu Val Glu Glu Leu Leu Phe Gly Thr
35      40      45
Gly Asp Thr Ile Glu Leu Ser Cys Thr Thr Pro Gly Ser Ser Val Ser
50      55      60
Val Val Trp Phe Lys Asp Gly Ile Ser Val Asp Pro Pro Thr Trp Ser
65      70      75      80
His Thr Gly Gln Lys Leu Leu Lys Ile Ile Asn Val Ser Tyr Asp Asp
85      90      95
Ser Gly Val Tyr Ser Cys Lys Ala Arg Gln Ser Ser Glu Val Leu Arg
100     105     110
Asn Val Thr Val Arg Val Thr Asp Ser Pro Ser Ser Gly Asp Asp Glu
115     120     125
Asp Asp Asp Glu Glu Ser Glu Ser Ala Asn Ala Pro Lys Phe Thr Arg
130     135     140
Pro Glu Trp Met Glu Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr
145     150     155     160
Val Arg Phe Arg Cys Pro Ala Ala Gly Lys Pro Thr Pro Ser Ile Thr
165     170     175
Trp Leu Lys Asn Gly Lys Glu Phe Lys Gly Glu His Arg Ile Gly Gly
180     185     190
Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met Glu Ser Val Val
195     200     205
Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val Ala Asn Lys Tyr Gly
210     215     220
Thr Ile Arg Glu Thr Tyr Thr Leu Asp Val Leu Glu Arg Thr Pro His
225     230     235     240
Arg Pro Ile Leu Gln Ala Gly Phe Arg Ser Asn Lys Thr Val Val Val
245     250     255
Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro
260     265     270
His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser Lys Phe Gly
275     280     285
Pro Asp Gly Asn Pro Tyr Val Thr Val Leu Lys Thr Ala Gly Val Asn
290     295     300
Thr Ser Asp Lys Glu Leu Glu Ile Gln Phe Leu Arg Asn Val Thr Phe
305     310     315     320
Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Tyr
325     330     335

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32

Ser	His	His	Ser	Ala	Trp	Leu	Thr	Val	Leu	Pro	Pro	Ala	Glu	Pro	Val
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Pro	Asp	Val	Asp	Thr	Ser	Val	Ser	Ile	Leu	Ala	Ala	Ala	Gly	Cys	Val
		355					360					365			
Ala	Val	Val	Ile	Leu	Val	Val	Ile	Ile	Ile	Phe	Thr	Tyr	Lys	Met	Lys
		370				375					380				
Met	Pro	Ser	Lys	Lys	Thr	Met	Asn	Thr	Ala	Thr	Val	His	Lys	Val	Ser
385					390					395					400
Lys	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	Ser	Ser	Met
				405					410					415	
Asn	Ser	Asn	Thr	Pro	Leu	Val	Arg	Ile	Thr	Arg	Leu	Ser	Ser	Ser	Asp
			420					425					430		
Gly	Pro	Met	Leu	Ala	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp	Pro
		435					440					445			
Lys	Trp	Glu	Leu	Ser	Arg	Ser	Arg	Leu	Thr	Leu	Gly	Lys	Pro	Leu	Gly
		450				455					460				
Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Met	Ala	Asp	Ala	Val	Gly	Ile	Glu
465					470					475					480
Lys	Asp	Lys	Pro	Asn	Lys	Ala	Thr	Ser	Val	Ala	Val	Lys	Met	Leu	Lys
				485					490					495	
Asp	Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	Glu
			500					505					510		
Met	Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	Gly
		515					520					525			
Ala	Cys	Thr	Gln	Asp	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala	Ser
		530				535					540				
Lys	Gly	Asn	Leu	Arg	Glu	Tyr	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	Met
545					550					555					560
Asp	Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Leu	Pro	Glu	Glu	Gln	Leu	Thr	Phe
				565					570					575	
Lys	Asp	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Glu	Tyr
			580					585					590		
Leu	Ala	Ser	Gln	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val
		595					600					605			
Leu	Val	Thr	Asp	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ala
		610				615					620				
Arg	Asp	Val	His	Asn	Ile	Asp	Tyr	Tyr	Lys	Lys	Thr	Thr	Asn	Gly	Arg
625					630					635					640
Leu	Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val	Tyr
				645					650					655	
Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu	Ile
			660					665					670		
Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	Leu
		675					680					685			
Phe	Lys	Leu	Leu	Lys	Glu	Gly	His	Arg	Met	Asp	Lys	Pro	Ala	Asn	Cys
		690				695					700				
Thr	His	Glu	Leu	Tyr	Met	Ile	Met	Arg	Glu	Cys	Trp	His	Ala	Val	Pro
705					710					715					720
Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg	Val
				725					730					735	
Leu	Thr	Val	Thr	Ser	Thr	Asp	Glu	Tyr	Leu	Asp	Leu	Ser	Val	Pro	Phe
			740					745					750		
Glu	Gln	Tyr	Ser	Pro	Ala	Cys	Pro	Asp	Ser	His	Ser	Ser	Cys	Ser	Ser
		755					760					765			
Gly	Asp	Asp	Ser	Val	Phe	Ala	His	Asp	Leu	Pro	Glu	Glu	Pro	Cys	Leu
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<210> 27  
 <211> 2403  
 <212> DNA  
 <213> Danio rerio



&lt;400&gt; 27

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taa
2403

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&lt;210&gt; 28

&lt;211&gt; 800

&lt;212&gt; PRT

&lt;213&gt; Danio rerio

&lt;400&gt; 28

```

Met Val Pro Leu Cys Leu Leu Leu Tyr Leu Ala Thr Leu Val Phe Pro
1      5      10      15
Pro Val Tyr Ser Ala His Leu Leu Ser Pro Glu Pro Thr Asp Trp Val
20     25     30
Ser Ser Glu Val Glu Val Phe Leu Glu Asp Tyr Val Ala Gly Val Gly
35     40     45
Asp Thr Val Val Leu Ser Cys Thr Pro Gln Asp Phe Leu Leu Pro Ile
50     55     60
Val Trp Gln Lys Asp Gly Asp Ala Val Ser Ser Ser Asn Arg Thr Arg
65     70     75     80
Val Gly Gln Lys Ala Leu Arg Ile Ile Asn Val Ser Tyr Glu Asp Ser
85     90     95
Gly Val Tyr Ser Cys Arg His Ala His Lys Ser Met Leu Leu Ser Asn
100    105    110

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Tyr	Thr	Val	Lys	Val	Ile	Asp	Ser	Leu	Ser	Ser	Gly	Asp	Asp	Glu	Asp
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Tyr	Asp	Glu	Asp	Glu	Asp	Glu	Ala	Gly	Asn	Gly	Asn	Ala	Glu	Ala	Pro
	130					135					140				
Tyr	Trp	Thr	Arg	Ser	Asp	Arg	Met	Glu	Lys	Lys	Leu	Leu	Ala	Val	Pro
145					150					155					160
Ala	Ala	Asn	Thr	Val	Lys	Phe	Arg	Cys	Pro	Ala	Ala	Gly	Asn	Pro	Thr
			165					170						175	
Pro	Ser	Ile	His	Trp	Leu	Lys	Asn	Gly	Lys	Glu	Phe	Lys	Gly	Glu	Gln
			180					185					190		
Arg	Met	Gly	Gly	Ile	Lys	Leu	Arg	His	Gln	Gln	Trp	Ser	Leu	Val	Met
		195					200					205			
Glu	Ser	Ala	Val	Pro	Ser	Asp	Arg	Gly	Asn	Tyr	Thr	Cys	Val	Val	Gln
	210					215					220				
Asn	Lys	Tyr	Gly	Ser	Ile	Lys	His	Thr	Tyr	Gln	Leu	Asp	Val	Leu	Glu
225					230					235					240
Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	Ala	Gly	Leu	Pro	Ala	Asn	Gln
				245					250					255	
Thr	Val	Val	Val	Gly	Ser	Asp	Val	Glu	Phe	His	Cys	Lys	Val	Tyr	Ser
			260					265					270		
Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	Lys	His	Ile	Glu	Val	Asn	Gly
		275					280					285			
Ser	Gln	Tyr	Gly	Pro	Asn	Gly	Ala	Pro	Tyr	Val	Asn	Val	Leu	Lys	Thr
	290					295					300				
Ala	Gly	Ile	Asn	Thr	Thr	Asp	Lys	Glu	Leu	Glu	Ile	Leu	Tyr	Leu	Thr
305					310					315					320
Asn	Val	Ser	Phe	Glu	Asp	Ala	Gly	Gln	Tyr	Thr	Cys	Leu	Ala	Gly	Asn
				325					330					335	
Ser	Ile	Gly	Tyr	Asn	His	His	Ser	Ala	Trp	Leu	Thr	Val	Leu	Pro	Ala
			340					345					350		
Val	Glu	Met	Glu	Arg	Glu	Asp	Asp	Tyr	Ala	Asp	Ile	Leu	Ile	Tyr	Val
		355					360					365			
Thr	Ser	Cys	Val	Leu	Phe	Ile	Leu	Thr	Met	Val	Ile	Ile	Ile	Leu	Cys
	370					375					380				
Arg	Met	Trp	Ile	Asn	Thr	Gln	Lys	Thr	Leu	Pro	Ala	Pro	Pro	Val	Gln
385				390						395					400
Lys	Leu	Ser	Lys	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn
				405					410					415	
Ser	Ser	Met	Asn	Ser	Asn	Thr	Pro	Leu	Val	Arg	Ile	Ala	Arg	Leu	Ser
			420					425					430		
Ser	Ser	Asp	Gly	Pro	Met	Leu	Pro	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro
		435					440					445			
Ser	Asp	Pro	Lys	Trp	Glu	Phe	Thr	Arg	Thr	Lys	Leu	Thr	Leu	Gly	Lys
	450					455					460				
Pro	Leu	Gly	Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Met	Ala	Glu	Ala	Ile
465					470					475					480
Gly	Ile	Asp	Lys	Glu	Lys	Pro	Asn	Lys	Pro	Leu	Thr	Val	Ala	Val	Lys
				485					490					495	
Met	Leu	Lys	Asp	Asp	Gly	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser
			500					505					510		
Glu	Met	Glu	Met	Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	Ile	Ile	Asn
		515					520					525			
Leu	Leu	Gly	Ala	Cys	Thr	Gln	Asp	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu
	530					535					540				
Tyr	Ala	Ser	Lys	Gly	Asn	Leu	Arg	Glu	Tyr	Leu	Arg	Ala	Arg	Arg	Pro
545					550					555					560
Pro	Gly	Met	Asp	Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Ile	Pro	Asn	Glu	Thr
				565					570					575	
Leu	Thr	Phe	Lys	Asp	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly
			580					585					590		
Met	Glu	Tyr	Leu	Ala	Ser	Lys	Lys	Cys	Ile	His	Arg	Asp	Pro	Ala	Ala
		595					600					605			
Arg	Asn	Val	Leu	Val	Thr	Glu	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe
	610					615					620				

Gly	Leu	Ala	Arg	Asp	Val	His	Asn	Ile	Asp	Tyr	Tyr	Lys	Lys	Thr	Thr
625					630					635					640
Asn	Gly	Arg	Leu	Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp
				645					650					655	
Arg	Val	Tyr	Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Tyr	Gly	Val	Leu	Leu
			660					665					670		
Trp	Glu	Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val
	675					680						685			
Glu	Glu	Leu	Phe	Lys	Leu	Leu	Lys	Glu	Gly	His	Arg	Met	Asp	Lys	Pro
	690				695						700				
Ala	Asn	Cys	Thr	His	Glu	Leu	Tyr	Met	Ile	Met	Arg	Glu	Cys	Trp	His
705					710					715					720
Ala	Val	Pro	Ser	Gln	Arg	Pro	Thr	Phe	Arg	Gln	Leu	Val	Glu	Asp	His
				725				730					735		
Asp	Arg	Val	Leu	Ser	Met	Thr	Ser	Thr	Asp	Glu	Tyr	Leu	Asp	Leu	Ser
		740					745					750			
Val	Pro	Phe	Glu	Gln	Tyr	Ser	Pro	Thr	Cys	Pro	Asp	Ser	Asn	Ser	Thr
		755				760					765				
Cys	Ser	Ser	Gly	Asp	Asp	Ser	Val	Phe	Ala	His	Asp	Pro	Leu	Pro	Glu
	770				775						780				
Glu	Pro	Cys	Leu	Pro	Lys	His	His	His	Ser	Asn	Gly	Val	Ile	Arg	Thr
785					790					795					800

<210> 29  
 <211> 20  
 <212> DNA  
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<220>  
 <221> primer\_bind  
 <222> (1)...(20)  
 <223> PCR Primer 1

<400> 29  
 agccctcact ccttctctag

20

<210> 30  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221> primer\_bind  
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 <223> PCR Primer 2

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 acctacaggt ggggtctttc attccc

26

<210> 31  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221> primer\_bind  
 <222> (1)...(25)  
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<400> 31  
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25

<210> 32

<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> primer\_bind  
<222> (1)...(25)  
<223> PCR Primer 4

<400> 32  
tgccaaacct acaggtgggg tcttt